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EXAMINER

DATSKOVSKIY, MICHAEL V

ART UNIT

PAPER NUMBER

2835

DATE MAILED: 04/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/872,628

Applicant(s)

ISENBURG, THOMAS A. 

Examiner

Michael Datskovsky

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1, 3-10, 12-25, 27-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1, 3-10, 12-25 and 27-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1, 3-10, 12-25 and 30-33 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1,18-20 and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Ali et al.

Ali et al teach an apparatus 104, Fig.2, for removable attaching a thermal solution passive heat sink) to a circuit board comprising: a mounting plate 150 having an opening designed to allow the heat sink 264 to contact a processor 110 located on the circuit board 130; a backing plate 140 connectable to the mounting plate 150, the

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backing plate 140 designed to prevent flexure of the circuit board 130; and a connector 142a having a first end and a second end, the first end attachable to the mounting plate 150 and the second end securable to the circuit board 130 and the backing plate 140, the connector designed to keep the mounting plate 150 in contact with the processor 110, wherein the heat sink can impact a force on the package 112 when the heat sink is secured on the mounting plate and removes heat from the processor. Ali et al teach furthermore said mounting plate, backing plate and connector being made from steel (col.5, lines 13-23). Regarding the claim 24: it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 14-17 and 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ali et al.

Regarding the claims 14 and partially 17: Ali et al teach all the limitations of the claims except said heat sink can be attached to the circuit board temporarily (for testing) or permanently. Both the claimed structure and the structure by Ali et al can be used being

assembled temporarily or permanently depending on the intended use, which subject was addressed above.

Regarding the claims 15-16 and partially 17: Ali et al teach all the limitations of the claims except said circuit board is less than 1,5 mm in thickness and 30 watts of power is removable by the heat sink near a temperature of about 100° C; or said circuit board is greater than 1,5 mm in thickness and 50 watts of power is removable by the heat sink near a temperature of about 100° C. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use such a range of sizes of a circuit board and cooling structure, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding the claims 29-30: First: The method steps are necessitated by the device structure as it is shown by Ali et al. Second: testing the circuit board, removing the heat sink attachment mechanism from the circuit board and reusing the mechanism on another circuit board without any structural limitations particular for permanent or temporal type of using the device imply only the intended use of it, which subject was addressed above.

6. Claims 1, 3-10, 12-25 and 26-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kehley et al in view of McGullough et al.

Kehley et al teach an apparatus, figs.1-10, for attaching a passive thermal solution to a circuit board and to a package, comprising: a mounting plate 90 having a mounting plate opening 98 designed to allow the passive thermal solution (heat sink 70) to

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contact a processor 60 located in a socketed package secured to a circuit board 30; a backing plate 20 connected with the mounting plate 90 with a plurality of connectors (four locking pins 241, 242, said connectors each having a first end secured to the slot 94 in the mounting plate 90, and the second end secured to the backing plate 20, wherein said backing plate 20 is designed to prevent flexure of the circuit board 30, and said connectors slide through the holes 34 in the circuit board are designed to keep the mounting plate 90 in contact with the processor 60. Kehley et al teach furthermore: said mounting plate 90 comprises four keyhole shaped slots 94 and four corresponding locking pins 241, 242 insertable therein, each slot 94 having an angled shelf 947, fig.5, along which a boss 225 of the locking pin 242 can slide, whereby creating a predetermined amount of pressure imparted to the processor 60, wherein pressure on the processor increases as the locking pins slide along the shelves in a downwardly direction. Kehley et al also teach that said processor can be attached permanently or temporary for testing purposes or further reusing (col.1, lines 48-57; and col.3, lines 24-48). Kehley et al do not teach the mounting plate having an opening designed to allow the heat sink to contact a processor, the heat sink having a threaded base engageable with threads in the mounting plate opening. McCullough et al teach an apparatus 100, fig.2, for attaching a thermal solution to a circuit board and to a package, comprising: a mounting plate 146 having a mounting plate threaded opening 142 designed to allow the thermal solution (heat sink 120) to contact a processor 135 located in a socketed package secured to a circuit board 112; said circuit board 112 connected with the mounting plate 146 with a plurality of connectors (locking pins 126), said connectors

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each having a first end secured to the mounting plate 146, and the second end secured to the circuit board 112, wherein said heat sink 120 has a threaded base 121 engageable with threads in the mounting plate opening 142. It would have been obvious to one skilled in the art at the time invention was made to employ a heat sink screwed in a mounting plate as it is shown by McCullough et al in the device by Kehley et al in order to simplify assembling and disassembling of the device. Regarding to the claims 15-17 and 34: Kehley et al teach all the limitations of the claims except said circuit board is less than 1,5 mm in thickness and 30 watts of power is removable by the heat sink near a temperature of about 100° C; or said circuit board is greater than 1,5 mm in thickness (claims 14 and 34) and 50 watts of power is removable by the heat sink near a temperature of about 100° C (claims 16 and 37). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use such a range of sizes of a circuit board and cooling structure, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Regarding to the claims 10 and 13: Kehley et al teach all the limitations of the claims except said the pressure imparted to the processor is about 345 to 690 kPa. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use such a range of pressure on the processor, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges (in this case dependent on the size and strength of the processor) involves only routine skill in the art. *In re Aller*, 105 USPQ 233. Regarding to

the claim 18: Kehley et al teach all the limitations of the claim except said mounting plate, backing plate and connector each made from a material selected from a group consisting of aluminum, steel and plastic. It would have been obvious to one having ordinary skill in the art at the time the invention was made to *make these parts* from a group consisting of aluminum, steel and plastic, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416. Regarding to the claims 25 and 27-33: The method steps are necessitated by the device structure as Kehley et al and McGullough et al show it.

Conclusion

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Datskovsky whose telephone number is (703) 306-4535. The examiner can normally be reached on Mn - Fry 8 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren E. Schuberg can be reached on (703) 308-4815. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Patent Examiner

Michael Datskovsky

A handwritten signature in black ink, appearing to read "Michael Datskovsky", written over the printed name.

March 27, 2003